SONY

4-174-240-**16** (1)

Network Camera

Installation Manual

Before operating the unit, please read this manual thoroughly and retain it for future reference.

IPELA Exmor™ HD

SNC-CH135/CH140/CH240

http://www.sony.net/

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Owner's Record

The model and serial numbers are located on the top. Record these numbers in the spaces provided below.
Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

WARNING

To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

WARNING

This installation should be made by a qualified service person and should conform to all local codes.

WARNING

A readily accessible disconnect device shall be incorporated in the building installation wiring.

WARNING (for Installers only)

Instructions for installing the equipment on the ceiling or the wall:
After the installation, ensure the connection is capable of supporting at least a force of 50 Newtons (N) downwards.

CAUTION for LAN port

For safety reason, do not connect the LAN port to any network devices that might have excessive voltage.
The LAN port of this unit is to be connected only to the devices whose power feeding meets the requirements for SELV (Safety Extra Low Voltage) and complies with Limited Power Source according to IEC 60950-1.

Power Supply

Caution for U.S.A. and Canada
The SNC-CH135/CH140/CH240 operates on 24 V AC or 12 V DC.
The SNC-CH135/CH140/CH240 automatically detects the power.

In the USA, this product shall be powered by a UL listed Class 2 Power Supply Only.

In Canada, this product shall be powered by a CSA Certified Class 2 Power Supply Only.

Caution for other countries
The SNC-CH135/CH140/CH240 operates on 24 V AC or 12 V DC.
The SNC-CH135/CH140/CH240 automatically detects the power.
Use a power supply rated 24 V AC or 12 V DC which meets the requirements for SELV (Safety Extra Low Voltage) and complies with Limited Power Source according to IEC 60950-1.

For customers in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B or Part 15 of FCC Rules.

For customers in Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

For the customers in Europe

The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japan.
The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany.
For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

For the customers in Europe, Australia and New Zealand

WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.
In the case that interference should occur, consult your nearest authorized Sony service facility.
This apparatus shall not be used in the residential area.

ATTENTION

The electromagnetic fields at specific frequencies may influence the picture of the unit.

Notes on Use

Before Use

- If you find condensation when you open the package, turn on the power after the condensation disappears.
- Remove the static electricity before operation or when touching the camera.

Data and security

- You should keep in mind that the images or audio you are monitoring may be protected by privacy and other legal rights, and the responsibility for making sure you are complying with applicable laws is yours alone.
- Access to the images and audio is protected only by a user name and the password you set up. No further authentication is provided nor should you presume that any other protective filtering is done by the service. Since the service is Internet-based, there is a risk that the image or audio you are monitoring can be viewed or used by a third-party via the network.
- SONY IS NOT RESPONSIBLE, AND ASSUMES ABSOLUTELY NO LIABILITY TO YOU OR ANYONE ELSE, FOR SERVICE INTERRUPTIONS OR DISCONTINUATIONS OR EVEN SERVICE CANCELLATION. THE SERVICE IS PROVIDED AS-IS, AND SONY DISCLAIMS AND EXCLUDES ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE SERVICE INCLUDING, BUT NOT LIMITED TO, ANY OR ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR THAT IT WILL OPERATE ERROR-FREE OR CONTINUOUSLY.
- Security configuration is essential for wireless LAN. Should a problem occur without setting security, or due to the limitation of the wireless LAN specifications, SONY shall not be liable for any damage, loss of recorded data or restoration thereof.
- Always make a test recording, and verify that it was recorded successfully. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF FAILURE OF THIS UNIT OR ITS RECORDING MEDIA, EXTERNAL STORAGE SYSTEMS OR ANY OTHER MEDIA OR STORAGE SYSTEMS TO RECORD CONTENT OF ANY TYPE.
- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
- If you lose data by using this unit, SONY accepts no responsibility for restoration of the data.

Personal information

- The images taken by the system using this device can identify individuals and thus they fall under "personal information" stipulated in the "Act on the Protection of Personal Information". Please handle the video data appropriately according to law.
- Information recorded using this product may also be "personal information". Upon disposal, transfer, repair, or any other occasion where this product or storage media is passed on to a third party, practice due care in its handling.

Operating or storage location

Avoid operating or storing the camera in the following locations.
- Extremely hot or cold places (Operating temperature: –10°C to +50°C [14°F to 122°F])
- Exposed to direct sunlight for a long time, or close to heating equipment (e.g., near heaters)
- Close to sources of strong magnetism
- Close to sources of powerful electromagnetic radiation, such as radios or TV transmitters
- Locations subject to strong vibration or shock
- Humid or dusty locations
- Locations exposed to rain
- Locations under the influence of fluorescent light or reflection of a window
- Under an unsteady light (the image will flicker.)

Ventilation

To prevent heat buildup, do not block air circulation around the camera.

Transportation

- Always turn off the power when carrying.
- When transporting the camera, repack it as originally packed at the factory or in materials of equal quality.

Cleaning

- Use a blower to remove dust from the lens.
- Use a soft, dry cloth to clean the external surfaces of the camera. Stubborn stains can be removed using a soft cloth dampened with a small quantity of detergent solution, then wipe dry.
- Do not use volatile solvents such as alcohol, benzene or thinners as they may damage the surface finishes.

Note on laser beams
Laser beams may damage image sensors. You are cautioned that the surface of image sensors should not be exposed to laser beam radiation in an environment where a laser beam device is used.

Phenomena Specific to Image Sensors

The following phenomena that may occur in images are specific to image sensors. They do not indicate a malfunction.

White flecks

Although the image sensors are produced with high-precision technologies, fine white flecks may be generated on the screen in rare cases, caused by cosmic rays, etc.
This is related to the principle of image sensors and is not a malfunction.
The white flecks especially tend to be seen in the following cases:
- when operating at a high environmental temperature
- when you have raised the gain (sensitivity)
- when using the slow shutter

Aliasing

When fine patterns, stripes, or lines are shot, they may appear jagged or flicker.

About the imaging conditions

- When Auto Iris is set to On, resolution may be unsatisfactory. In this case, set Auto Iris to Off.
- When View-DR is set to On, resolution may be unsatisfactory. In this case, set View-DR to Off, Auto Iris to Off and shutter speed to Auto (SNC-CH240).
- When using the manual Iris, set View-DR to Off (SNC-CH240).

About the Supplied Manuals

Installation Manual (this document)

This Installation Manual describes the names and functions of parts and controls of the Network Camera, gives connection examples and explains how to set up the camera. Be sure to read the Installation Manual before operating.

User's Guide (stored in the CD-ROM)

The User's Guide describes how to set up the camera and how to control the camera via a Web browser.
After installing and connecting the camera correctly, operate referring to this User's Guide.

Using the CD-ROM Manuals

The supplied CD-ROM disc includes the User's Guides for this unit in PDF format.

Preparations

The Adobe Reader Version 6.0 or higher must be installed on your computer in order to use the guides stored in the CD-ROM disc.

Note

If Adobe Reader is not installed, it may be downloaded from the following URL:
http://www.adobe.com/

Reading the manual in the CD-ROM

1 **Insert the CD-ROM in your CD-ROM drive.**
A cover page appears automatically in your Web browser.
If it does not appear automatically in the Web browser, double-click on the index.htm file on the CD-ROM.

2 **Select and click on the manual that you want to read.**
This opens the PDF file of the manual.
Clicking an item in the Table of Contents allows you jump to the relevant page.

Notes

- The files may not be displayed properly, depending on the version of Adobe Reader. In this case, install the latest version, which you can download from the URL mentioned in "Preparations" above.
- If you have lost or damaged the CD-ROM, you can purchase replacement. Contact your Sony service representative.

Adobe and Acrobat Reader are trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Location and Function of Part

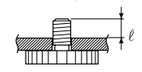
Front A

❶ Lens
A vari-focal lens is mounted as standard equipment.

❷ Focus ring
Turn this ring toward N (near) to focus on a closer object. Turn it toward F (infinite) to focus on a farther object.

❸ Zoom ring
Turn this ring toward T for telephoto, or toward W for wide-angle.

❹ Tripod screw hole
Use this screw hole when attaching the camera to a tripod (screw: 1/4", 20 UNC). You can attach a tripod to either the top or bottom of the camera.



U1/4", 20 UNC
ℓ = 4.5 mm - 7 mm (ISO standard) (with the screws fastened)

Caution
Use the mounting screw whose length is 4.5 mm – 7 mm only. Use of other screws may cause improper mounting and damage parts inside the camera.

❺ Rating Label
This label shows the name of device and its electric rating.

❻ Lens connector (4-pin socket)
Supplies power and control signals to an auto-iris lens.

❼ Lens mount (SNC-CH135 only)
Use to mount an appropriate CS-mount lens.
Use the C mount adaptor (optional) when you use the C-mount lens.
(A vari-focal lens is mounted as the standard equipment for SNC-CH140/CH240.)

Rear B

❽ DC 12 V/AC 24 V (power input) terminal
Connect to a 12 V DC or 24 V AC power supply system.

❾ LAN network port (RJ-45)
Connect to a hub on the 10BASE-T/100BASE-TX network using a network cable (UTP, category 5).
Refer to "Connecting the power source" on the reverse side for PoE connection.

❿ Easy Focus button
Press this button to automatically adjust the focus.
To load the default setting, press and hold this button for 4 seconds.

⓫ Fall-prevention wire rope mounting screw hole
When installing the camera to the ceiling or the wall, secure the supplied wire rope to this hole using the supplied screw.

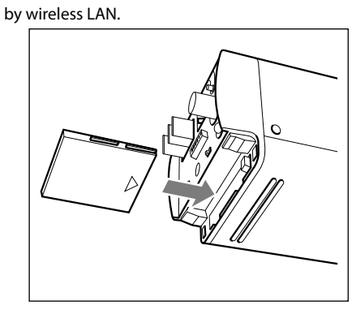
⓬ VIDEO OUT (video output) connector
Connect the BNC cable (not supplied) to this connector.

Note
The output image is mainly used to adjust the view angle, and may not display correctly, depending on the video format and image size settings.
- The image may not display properly in the horizontal and/or vertical plane.
- The image may be reduced.

⓭ ⏚ (ground) terminal
This is a ground terminal for the chassis.

⓮ CF card lever
Press the lever to remove the CF memory card** from the CF card slot.

⓯ CF card slot
This slot is used for the optional SNCA-CFW5* wireless card or CF memory card**.
Insert the SNCA-CFW5* into the slot and attach the optional wireless LAN antenna SNCA-AN1* to the camera to extend the communicable distance by wireless LAN.



Notes
Insert the CF memory card with its bottom side facing the camera' NETWORK indicator.
* SNCA-CFW5 and SNCA-AN1 are not available in some countries and areas. For details, contact your authorized Sony dealer.
** For inquiries regarding verified CF memory cards, contact your authorized Sony dealer.

⓰ CF card slot cover
To remove the CF card slot cover, pull the cover forward.
When reinstalling the CF card slot cover, be sure the cover is completely closed.

⓱ NTSC/PAL switch
Switching the video output.

⓲ I/O (Input/Output) port
This cable is provided with a sensor input and two alarm outputs.
The wires of the cable control the following signals.

PinNo.	Signal
1	Sensor input+
2	Sensor input– (GND)
3	Alarm output 1+
4	Alarm output 1–
5	Alarm output 2+
6	Alarm output 2–

For details on each function and required settings, see the User's Guide stored in the supplied CD-ROM.

For the wiring, see "Connecting the I/O cable."

⓳ 🔊 (line output) jack (minijack, monaural)
Connect a commercially available speaker system with a built-in amplifier.

⓴ POWER indicator (Green)
When the power is supplied to the camera, the camera starts checking the system. If the system is normal, this indicator lights up. If a system error occurs, this indicator flashes every second. In this case, consult your authorized Sony dealer.

㉑ 🎤 (microphone input) jack (minijack, monaural)
Connect a commercially available microphone. This jack supports plug-in-power microphones (rated voltage: 2.5 V DC).

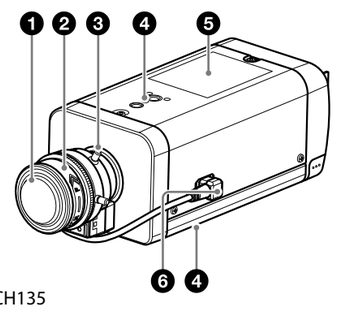
㉒ NETWORK indicator (Green/Orange)
The indicator lights up or flashes when the camera is connected to the network. The indicator is off when the camera is not connected to the network. When 100BASE-TX is connected, the indicator turns green. When 10BASE-T is connected, the indicator turns orange.

㉓ Reset switch
To reset the camera to the factory default settings, turn on the power to the camera while holding down this switch with a pointed object.

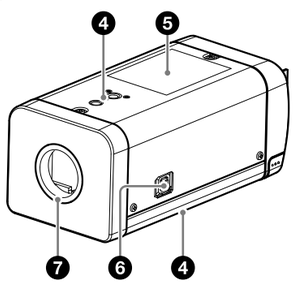
(continued on the reverse side)

A

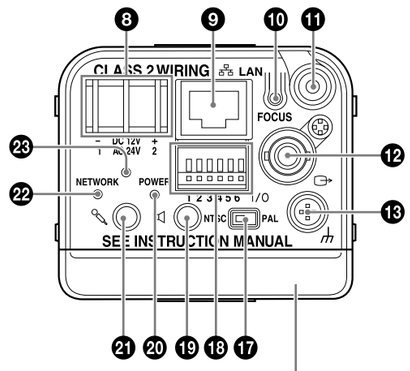
SNC-CH140/CH240

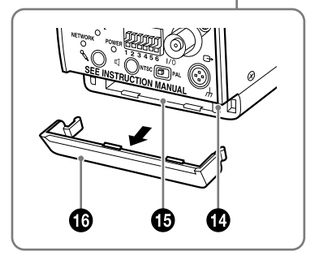


SNC-CH135

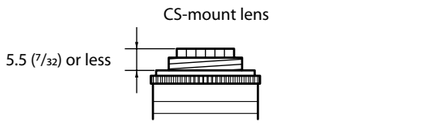


B



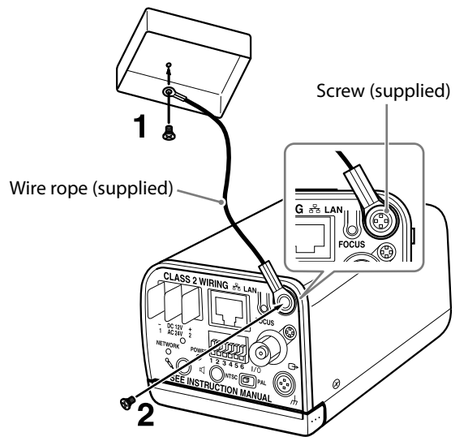


C

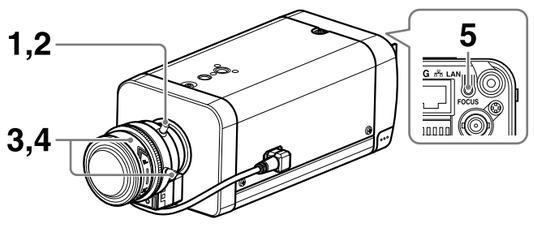


Unit: mm (inch)

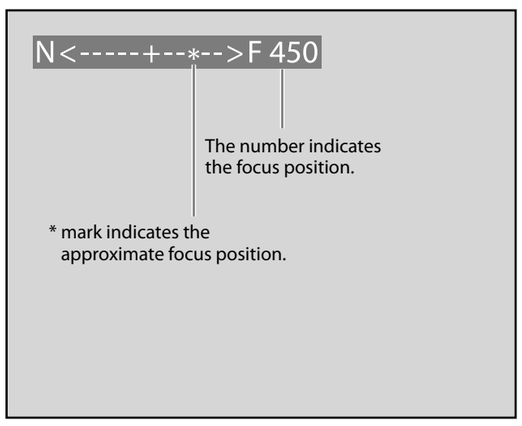
D



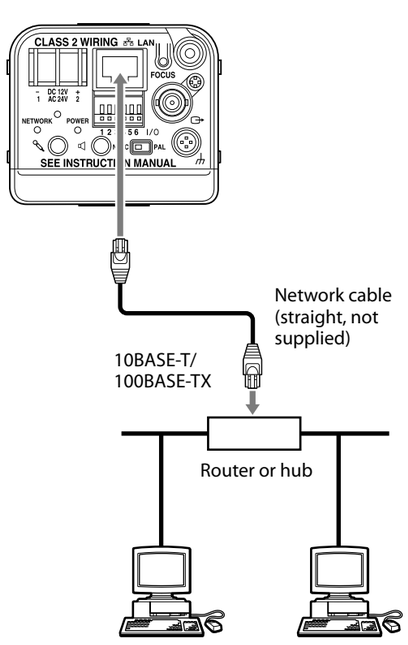
E



When Easy Focus button is pressed

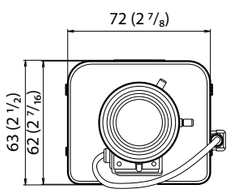


F

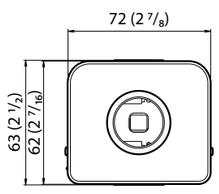


G

Front (SNC-CH140/CH240)

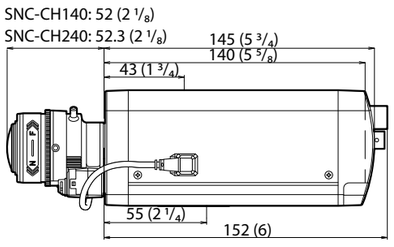


Front (SNC-CH135)

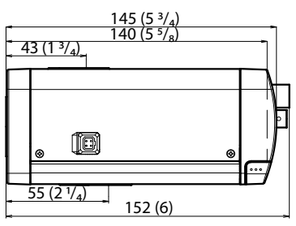


Side (SNC-CH140/CH240)

SNC-CH140: 52 (2 1/8)
SNC-CH240: 52.3 (2 1/8)



Side (SNC-CH135)



Unit: mm (inches)

Installation

Caution

To prevent the camera from falling, make sure to attach the supplied wire rope.

Suitable lens C

The lens must be a CS-mount type and the protrusion behind the mounting surface must be 5.5 mm (7/32 inch) or less.

Caution

- Keep the lens mount cap on the camera when it is not attached the lens.
- When you install it into a wall or a ceiling, check that the wall or the ceiling is strong enough to hold the weight of the camera including the mounting bracket, and install it without fail. If not, the camera falls down and causes a serious injury. Also, check if the mounting is not loosened at least once a year. Make the checking interval short according to use condition.
- Performance will depend on the installation environment and the lens itself. For details, contact your authorized Sony dealer.

Attaching the wire rope D

When you install the camera on a ceiling or a high position, be sure to attach the supplied wire rope to prevent the camera from falling.
Attach the wire rope to the screw hole on the rear of the camera, as in the illustration.

Note

Take care not to short-circuit the power terminal or the cable with the wire rope when you attach it.

1 **Secure the wire rope to the junction box on the ceiling.**
Use a screw to match the screw hole of your junction box (not supplied).
2 **Secure the wire rope to the wire rope mounting screw hole on the rear of the camera using the supplied screw.**

Caution

Use the supplied screws for installation. If not, the wire rope may not function properly.

Adjusting the Camera Coverage and Focus E

1 **Loosen the zoom ring locking screw to adjust the camera shooting coverage.**
2 **Tighten the locking screw to fix the zoom.**
3 **Loosen the focus ring locking screw to adjust the focus.**
4 **Tighten the locking screw to fix the focus.**
5 **Press the Easy Focus button on the rear to automatically adjust the focus.**

Note

You may not achieve satisfactory focus with the Easy Focus button due to the shooting environment.
In this condition, press and hold Easy Focus button for more than 4 seconds to return to the default flange back position. Then, adjust the focus following step 3 and 4.

Connection

Connecting to the Network F

Connect the LAN cable of the camera to a router or hub in the network using the network cable (straight, not supplied).

To connect to a computer

Connect the LAN cable of the camera to the network connector of a computer using the network cable (cross, not supplied).

Connecting the Power Source

There are three ways to supply power to this camera, as follows.

- 12 V DC
- 24 V AC
- Power supply equipment pursuant to IEEE802.3af (PoE* system)

*PoE means Power over Ethernet.

Connecting to 12 V DC or 24 V AC source

Connect the power input cable of the camera to a 12 V DC or 24 V AC source.

- Use a 12 V DC or 24 V AC source isolated from 100 to 240 V AC. The acceptable voltage ranges for each are as follows.
  12 V DC: 10.8 V to 13.2 V
  24 V AC: 21.6 V to 26.4 V
  - In the USA, The product shall be powered by a UL Listed Class 2 Power Supply Only.
  - In Canada, The product shall be powered by a CSA certified Class 2 Power Supply Only.
- Use UL cable (VW-1 style 10368) for these connections.

recommended cable

DC12 V:

CABLE(AWG)	#24	#22	#20
Max. length(m(feet))	8 (26.2)	14 (45.9)	20 (65.5)

AC24 V:

CABLE(AWG)	#24	#22	#20
Max. length(m(feet))	11 (36.1)	19 (62.3)	28 (91.9)

Connecting to the power supply equipment pursuant to IEEE802.3af

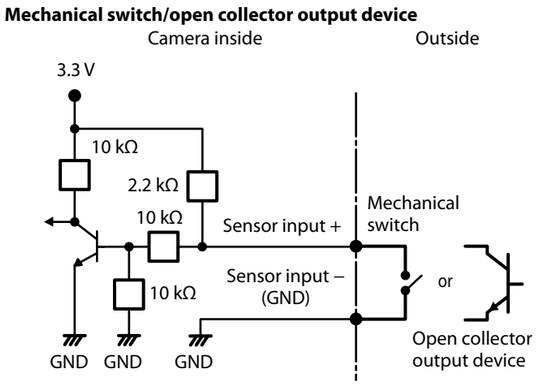
The power supply equipment pursuant to IEEE802.3af supplies the power through the LAN cable. For details, refer to the Instruction Manual of the equipment.

Connecting the I/O Cable

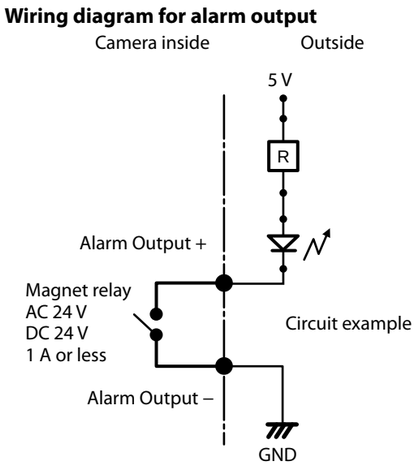
Connect the wires of the I/O cable as follows:

Wiring diagram for sensor input

Mechanical switch/open collector output device



Wiring diagram for alarm output



Specifications

Compression

Video compression format	JPEG/MPEG4/H.264
Audio compression format	G.711/G.726 (40, 32, 24, 16 kbps)
Maximum frame rate	SNC-CH135/CH140 H.264: 30 fps (1280 × 720) SNC-CH240 H.264: 30 fps (1920 × 1080)

Camera

Signal system	NTSC color system/PAL color system (switchable)
Image device	SNC-CH135/CH140 1/3type CMOS (Exmor) Effective picture elements: Approx. 1,390,000 SNC-CH240 1/2.8type CMOS (Exmor) Effective picture elements: Approx. 3,270,000
Synchronization	Internal synchronization
Horizontal resolution	600 TV lines (analog video)
Video S/N	More than 50 dB (AGC 0 dB)
Minimum illumination	SNC-CH140 F1.2/View-DR Off/VE off/AGC High/XDNR Middle/50 IRE (IP) Color 0.20 lx Black & White 0.10 lx SNC-CH240 F1.3/View-DR Off/VE off/AGC High/XDNR Middle/50 IRE (IP) Color 0.40 lx Black & White 0.25 lx

Lens

Focal length	SNC-CH140: 2.8 mm ~ 8 mm SNC-CH240: 2.8 mm ~ 6 mm
Maximum relative aperture	SNC-CH140: F1.2 ~ F1.9 SNC-CH240: F1.3 ~ F1.9
View angle	SNC-CH140 Vertical: 76.2° ~ 27.2° (1280 × 1024) Horizontal: 96.5° ~ 33.9° SNC-CH240 Vertical: 74.2° ~ 35.2° (1920 × 1440) Horizontal: 101.2° ~ 47.0°
Minimum object distance	300 mm

Interface

LAN port	10BASE-T/100BASE-TX, auto negotiation (RJ-45)
I/O port	Sensor input: × 1, make contact, break contact Alarm output: × 2, 24 V AC/DC, 1 A (mechanical relay outputs electrically isolated from the camera)
CF card slot	CF Type I/II
Video output	VIDEO OUT: BNC, 1.0 Vp-p, 75 ohms, unbalanced, sync negative
Microphone input*	Minijack (monaural) Plug-in-power supported (rated voltage: 2.5 V DC) Recommended load impedance: 2.2 kΩ
Line input*	Minijack (monaural)

* The microphone input and the line input are switchable with operating menu.

Line output	Minijack (monaural), Maximum output level: 1 Vrms

Others

Power supply	12 V DC ± 10% 24 V AC ± 10%, 50/60 Hz IEEE802.3af compliant (PoE system)
Power consumption	SNC-CH135/CH140: 9.0 W max. SNC-CH240: 11.2 W max.
Operating temperature	Start temperature: 0°C~50°C (32°F to 122°F) Working temperature: –10°C~+50°C (14°F to 122°F)
Storage temperature	–20°C to +60°C (–4°F to +140°F)
Operating humidity	20% to 80%
Storage humidity	20% to 95%
Dimensions (w/h/d) G	SNC-CH135 72 mm × 63 mm × 145 mm (2 7/8 inches × 2 5/8 inches × 5 3/4 inches) not including the projecting parts and lens SNC-CH140: 72 mm × 63 mm × 197 mm (2 7/8 inches × 2 1/2 inches × 7 7/8 inches) with lens not including the projecting parts SNC-CH240: 72 mm × 63 mm × 197.3 mm (2 7/8 inches × 2 1/2 inches × 7 7/8 inches) with lens not including the projecting parts
Mass	SNC-CH135: Approx. 540 g (1 lb 3.1 oz) without lens SNC-CH140: Approx. 600 g (1 lb 5.2 oz) with lens SNC-CH240: Approx. 650 g (1 lb 6.9 oz) with lens
Supplied accessories	CD-ROM (Users Guides, and supplied programs) (1) Wire rope (1) Screw M4 (1) Installation Manual (this document) (1)
Optional accessories	Wireless card SNCA-CFW5* Wireless LAN antenna SNCA-AN1* * SNCA-CFW5, SNCA-AN1 may not be purchasable in some regions. For details, contact your Sony service representative.

Design and specifications are subject to change without notice.

Recommendation of Periodic Inspections
In case using this device over an extended period of time, please have it inspected periodically for safe use.
It may appear flawless, but the components may have deteriorated over time, which may cause a malfunction or accident.
For details, please consult the store of purchase or an authorized Sony dealer.